

# ABSTRACT

Continuous linear regulated zero dropout charge pump with high efficiency load predictive clocking scheme AND method. The method of pumping charge includes amplifying the difference between a feedback signal from the charge pump output and a reference, and alternately switching between: a) coupling a first flying capacitor between first and second power supply terminals, and coupling a second flying capacitor between the amplified difference and the charge pump output; and b), coupling the second flying capacitor between first and second power supply terminals, and coupling the first flying capacitor between the amplified difference and the charge pump output. Preferably the switching is done before the amplifier saturates. Various alternate embodiments and method and apparatus for starting the charge pump are described.